US COAST GUARD
MARINE SAFETY OFFICE PORTLAND, MAINE

SAFETY ALERT

Encapsulated Rudder Port Fairing Blocks

On March 26th, 1999 a 35 foot fishing vessel operating in Penobscot Bay experienced a severe flooding incident involving the failure of the vessel's rudder port fitting. Examination of the vessel after salvage found that the vessel's rudder port fitting had been mounted to the hull on a wood fairing block by the manufacturer. This fairing block failed, and when the rudder port fitting tore away from its mount, a significant hole opened in the fiberglass hull.

On May 13th, 1999 Coast Guard safety examiners identified another vessel fitted with a similar encapsulated wood fairing block. During a test of the vessel's steering system, the fiberglass encapsulating the wood was noted to have cracked, resulting in seawater seeping from under the fairing block into the hull. Further examination of the system found that the wood fairing block was poorly secured to the hull and was in danger of failure similar to that experienced by the vessel on March 26th, 1999.

This rudder port fitting installation arrangement was widely used by certain boat builders in the mid seventies and early eighties. Reliable sources in the marine surveying and boat building industries report similar failures of this arrangement through the years. This manufacturing technique is believed to have been used in an attempt to reinforce the hull in way of the rudder port fitting.

Above, the failed rudder port fitting. The fishing vessel involved in the March 26th incident nearly sank when the wood fairing block beneath the rudder port fitting failed, tearing the fitting from the hull.

Encapsulated rudder port fairing blocks can be identified by a fiberglass covered block between the hull and rudder port fitting.

While the original strength of the mounting of rudder port fittings on these vessels may have been acceptable, Coast Guard safety officials are concerned that the possibility of rot and possible delamination of the wood fairing block from the hull may lead to flooding accidents similar to that experienced in Penobscot Bay on March 26th.

The strength and condition of these fitting installations maybe degraded by alterations to a vessel's steering system. Replacement of rudders, steering rams, or hydraulic systems may result in increased forces being placed on the rudder port fitting, which may then accelerate failure of the fitting. In the vessels involved in the March 26th and May 13th incidents, recent significant modifications had been made to the steering system.

Operators of vessels fitted with similar rudder port fitting installations are encouraged to carefully inspect them, and their associated steering systems, for potential failure. Proper inspection would include a close visual examination of the fitting while the rudder is cycled through its full range. Any movement of the fitting or water seepage is a sign of potential problems. Major boat manufacturers in Maine indicate that current boat building techniques include installation of the rudder port fitting to the hull on solid reinforced fiberglass, without the use of wood laminates, due to the potential for wood rot, expansion and deterioration when wet.

For further information contact:
USCG Marine Safety Office
103 Commercial Street
Portland, Maine 04101
(207) 780-3256
http://www.uscg.mil/d1/units/msoport

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